AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A wearable action-assist device which assists or executes an action of a wearer by substituting for the wearer, comprising:

an action-assist tool ~~having~~ including an actuator which gives power to the wearer;

a biosignal sensor detecting a ~~wearer's~~ biosignal from the wearer;

a biosignal processing unit acquiring, from the biosignal detected by the biosignal sensor, a nerve transfer signal for operating a ~~wearer's~~ muscular line skeletal system of the wearer, and a myoelectricity signal accompanied with a ~~wearer's~~ muscular line activity of the wearer;

~~an optional~~ a control unit generating a command signal for causing the actuator to generate power according to ~~a wearer's~~ an intention of the wearer, by using the nerve transfer signal and the myoelectricity signal which are acquired by the biosignal processing unit; and

a driving current generating unit generating a current according to the nerve transfer signal and a current according to the myoelectricity signal, respectively, based on the command signal generated by the ~~optional~~ control unit, to supply the respective currents to the actuator,

wherein the biosignal processing unit comprises:

a unit which amplifies the biosignal;

a first filter which extracts the nerve transfer signal from the biosignal; and

a second filter which extracts the myoelectricity signal from the biosignal.

2. (original): The wearable action-assist device according to claim 1 wherein the wearable action-assist device comprises a physical quantity sensor which detects a physical quantity related to the action of the wearer.

3. (canceled).

4. (original): The wearable action-assist device according to claim 1 wherein the driving current generating unit supplies to the actuator a total current of a pulse current which is generated according to the nerve transfer signal and a current which is generated so as to be substantially proportional to the myoelectricity signal, and causes operation of the actuator to start by supplying the pulse current.

5. (original): The wearable action-assist device according to claim 4 wherein the driving current generating unit generates, when starting the supply of current to the actuator, the pulse current or the total current such that the pulse current or the total current is larger than a lower limit of current that is capable of driving the actuator.

6. (currently amended): The wearable action-assist device according to claim 2 wherein the wearable action-assist device comprises a database in which a given correspondence relation between each of respective standard parameters of a series of minimum action units ~~(phases)~~ or phases which constitute a wearer's action pattern classified as a task, and a power application rate ~~(power assist rate)~~ or power assist rate of the actuator is stored, and

wherein the optional control unit estimates a phase of a task which the wearer intends to

perform, by comparing the physical quantity detected by the physical quantity sensor with a

standard parameter stored in the database, the optional control unit determining a power assist

rate according to the estimated phase based on the correspondence relation, and generating a

command signal for causing the actuator to generate a power according to the power assist rate.

7. (original): The wearable action-assist device according to claim 1 wherein, when the

wearer operates by reflexes, the driving current generating unit supplies a current for driving

the actuator in an opposite direction of the operation concerned for a predetermined time, and,

after the predetermined time, the driving current generating unit supplies a current for driving the

actuator in a direction towards the operation.

8. (canceled).

9. (canceled).

10. (canceled).

11. (canceled).

12. (canceled).

13. (canceled).

14. (currently amended): A method of controlling a wearable action-assist device which assists or executes an action of a wearer by substituting for the wearer, ~~wherein~~ using an action-assist tool ~~having~~ including an actuator which gives power to the wearer, which action-assist tool is attached to the wearer, the method comprising ~~the steps of~~:

detecting a ~~wearer's~~ biosignal from the wearer by a biosignal sensor of the wearable action-assist device;

acquiring, from the detected biosignal, a nerve transfer signal for operating a ~~wearer's~~ muscular line skeletal system of the wearer and a myoelectricity signal accompanied with a ~~wearer's~~ muscular line activity of the wearer, by a biosignal processing unit of the wearable action-assist device;

generating, by a control unit of the wearable action-assist device, ~~an optional~~ a command signal for causing the actuator of the action-assist tool to generate power according to ~~a wearer's~~ an intention of the wearer, by using the nerve transfer signal and the myoelectricity signal ~~which are acquired~~; and

generating, by a driving current generating unit of the wearable action-assist device, a current according to the nerve transfer signal and a current according to the myoelectricity signal, respectively, based on the generated ~~optional~~ command signal, to supply the respective currents to the actuator,

wherein the acquiring comprises:

amplifying the biosignal by an amplifying unit of the biosignal processing unit;

extracting the nerve transfer signal from the biosignal by a first filter of the biosignal processing unit; and

extracting the myoelectricity signal from the biosignal by a second filter of the biosignal processing unit.

15. (original): The method of controlling the wearable action-assist device according to claim 14 wherein a total current of a pulse current which is generated according to the nerve transfer signal and a current which is generated so as to be substantially proportional to the myoelectricity signal is supplied to the actuator, and operation of the actuator is caused to start by supplying the pulse current.

16. (original): The method of controlling the wearable action-assist device according to claim 15 wherein, when starting the supply of current to the actuator, the pulse current or the total current is generated such that the pulse current or the total current is larger than a lower limit of current that is capable of driving the actuator.

17. (currently amended): The method of controlling the wearable action-assist device according to claim 14 wherein the method further comprises ~~the steps of~~:

detecting a physical quantity related to the action of the wearer;

estimating a phase of a task which the wearer intends to perform, by comparing the physical quantity with each of respective standard parameters of a series of minimum action units ~~(phases)~~ or phases which constitute ~~a wearer's~~ an action pattern of the wearer classified as a task;

determining a power assist rate according to the estimated phase based on the

correspondence relation; and generating a command signal for causing the actuator to generate a

power according to the power assist rate.

18. (original): The method of controlling the wearable action-assist device according to

claim 14 wherein, when the wearer operates by reflexes, a current for driving the actuator in an

opposite direction of the operation concerned for a predetermined time is supplied, and, after the

predetermined time, a current for driving the actuator in a direction towards the operation is

supplied.

19. (canceled).

20. (canceled).

21. (canceled).

22. (canceled).

23. (canceled).

24. (currently amended): A <u>computer-readable recording medium storing a</u> program ~~for~~

~~causing~~ <u>thereon which, when executed by</u> a computer, <u>causes the computer</u> to execute the

method ~~of controlling the wearable action-assist device~~ according to claim 14 ~~for controlling the~~

~~wearable action-assist device~~.

    25. (canceled).